REMARKS

Claims 1-20 are pending and rejected in this application.

Claims 1, 3-10, and 13-17 are amended hereby; and claims 2, 11, 12, and 18-20 are cancelled hereby. Applicants submit that no new matter has been added as part of such amendments.

Responsive to the rejection of claims 1-20 under 35 U.S.C. § 112, 2nd paragraph, Applicants have amended claim 1, 3-10, and 13-17 and have cancelled claims 2, 11, 12, and 18-20, keeping in mind the comments offered by the Examiner. Applicants submit that claims 1, 3-10, and 13-17 are now in allowable form and hereby respectfully request that the rejection under 35 U.S.C. § 112, 2nd paragraph, be withdrawn.

Responsive to the rejection of claims 1-3, 5, 6, and 9-20 under 35 U.S.C. § 103(a) as being unpatentable over JP 48-14572 or U.S. Patent No. 2,359,748 (Clemens), Applicants have amended claims 1, 3, 5, 6, 9, 10, and 13-17 and have cancelled claims 2, 11, 12, and 18-20. Applicants submit that claims 1, 3, 5, 6, 9, 10, and 13-17 are now in condition for allowance.

Claim 1, as amended, recites in part:

> adding calcium hydroxide to waste water containing...calcium..., the quantity of calcium hydroxide to be added ranging in 75-125% of the equivalent weight to calcium...

In a related manner, claim 6, as amended, recites in part:

> said adding step including that the calcium hydroxide added causes the pH of the waste water to range from 8.5-10.5...

Applicants submit that such an invention as set forth in claims 1 and 6, as amended, neither taught, disclosed, nor suggested by JP 48-14572, Clemens, or any of the other cited references, alone or in combination.

JP 48-14572, as best understood, discloses a process for precipitating calcium and magnesium from a water base mixture including calcium based minerals, magnesium based minerals, and potentially other minerals. Such precipitation of the calcium and magnesium is preformed using calcium hydroxide, as indicated by the two reaction equations presented at the bottom of page 399 of JP '572.

However, as admitted by the Examiner, JP '572 does not disclose or suggest the relative ratio at which the calcium hydroxide is to be introduced into such a mixture, nor does JP '572 disclose or suggest the pH to be produced upon adding the calcium hydroxide thereto. The Examiner instead contends that the specific quantity of calcium hydroxide added and/or the pH utilized would have been an obvious matter of process optimization to one of ordinary skill in the art.

Yet, one of ordinary skill in the art would not expect the pH an/or the calcium hydroxide content required in the situation presented in JP '572 to necessarily be indicative or suggestive of the pH and/or calcium hydroxide content needed within the present invention. Specifically, the calcium hydroxide is being used in JP '572 to not only precipitate calcium but also magnesium and possibly other minerals from an aqueous mixture. As such, one of ordinary skill in the art would not necessarily expect

the precess parameters used in JP '572 to also be appropriate for the present invention.

Furthermore, Applicants establish the criticality of the amount of calcium hydroxide to be added at pages 8 and 9 of the specification (especially table 2) and set forth the criticality of pH to be used at page 11 (especially table 6). In each instance it can be seen of the chosen value ranges for calcium hydroxide concentration and pH value produce the best removal calcium rates. Since Applicants have demonstrated the criticality of the pH and calcium hydroxide concentration limitations, it is not appropriate to for the Examiner to rely soley on case law as the rational to support an obviousness rejection (MPEP § 2144.04). Thus, JP '572 does not disclose or suggest the present invention as set forth in either of claims 1 or 6, as amended.

Clemens '748 discloses softening hard water using soda ash or sodium carbonate and lime as lime hydrate or calcium hydroxide. Clemens further sets forth that the lime, as lime hydrate, and soda ash are introduced in amounts sufficient for the requirements of the process. Clemens does disclose that is preferred that the lime be in excess over such requirements in order that all for the magnesium content may be precipitated out at this stage or point. The Examiner does admit that Clemens does not disclose or suggest the specific quantity of calcium hydroxide to be added and/or the pH to be utilized, instead contending that the choices thereof would not have been an obvious manner of process optimization to one of ordinary skill in the art.

However, unlike the present invention, Clemens employs both soda ash or sodium carbonate along with lime and/or calcium hydroxide to precipitate the calcium content and, preferably, the magnesium content from the hard or wall water. As such, one or ordinary skill in the art would not necessarily expect that the amount of calcium hydroxide to be added in Clemens and/or the pH of the water produced upon adding the soda/lime mixture thereto to be in the ranges claimed in the present invention. Furthermore, as set forth above, Applicants have established in the present specification the criticality of both the quantity of calcium hydroxide to be added and the pH to be utilized, making it inappropriate for the Examiner to rely solely on case law as rational to support an obviousness rejection (MPEP § 2144.04). Thus, for all the foregoing reasons, Clemens '748 fails to teach or suggest the present invention as set forth in either of amended claims 1 and 6.

For all the forgoing reasons, Applicants submit that claims 1 and 6, and those claims depending therefrom, are now in condition for allowance and hereby respectfully request that the rejection thereof based upon either JP 48-14572 or Clemens '748 be withdrawn.

Claims 4, 7, and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 48-14572 or Clemens in view of U.S. Patent No. 5,403,495 (Kust et al). However, claims 4, and 7 depend from claim 1, which is in condition for allowance for the reasons set forth above, and claim 8 depends from claim 6, which is in condition for allowance for the reasons set forth above. Accordingly, Applicants submit that claims 4,

7, and 8 are also in condition for allowance, the allowance of which is hereby respectfully requested.

If the Examiner has any questions or comments that would speed prosecution of this case, the Examiner is invited to call the undersigned at 260/485-6001.

Respectfully submitted,

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RJK/mdc10

Encs: Amendments to the Claims
(5 Sheets; pp. 13-17)
Explanatory Cover Sheet Page 1
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450, Alexandria, VA 22313-1450, on: July 22, 2003.

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